



# UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/807,979

03/24/2004

Assaf Govari

BIO-5044

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27777

7590

09/05/2006

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EXAMINER

VRETTAKOS, PETER J

ART UNIT

PAPER NUMBER

3739

DATE MAILED: 09/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/807,979

Applicant(s)

GOVARI, ASSAF

Examiner

Peter J. Vrettakos

Art Unit

3739

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

The application is published application number: 2005/0215 990. The publication is classified in US 606/27.

The effective filing date of this application is 3-24-04.

Pending claims are 1 and 4-11.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1 and 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sliwa.**

Sliwa discloses:

1. Apparatus (see figure 64, *inter alia*) for use with a subject, comprising: a catheter (see figure 8, *inter alia*) having a longitudinal axis and having a distal portion; and an ultrasound array (406) fixed to the distal portion, adapted to operate in a phased array mode (col. 29:26-30) to apply ablating energy to tissue of the subject located in a range of azimuths (note transducer/tissue angle flexibility depicted in figure 67 and disclosed in col. 30:55-65), with respect to the longitudinal axis, that is less than 360 degrees (this a near complete range of motion – barely limiting). **Further**, Sliwa discloses the

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apparatus wherein the ultrasound array is adapted to apply the ablating energy to tissue in a range of azimuths between about 180 and 359 degrees (note transducer/tissue angle flexibility depicted in figure 67 and disclosed in col. 30:55-65).

4. The apparatus according to claim 1, wherein when the catheter is disposed in a vicinity of an ostium of a pulmonary vein (col. 2:57-60, *inter alia*) of the subject, the range of azimuths is sufficiently smaller than 360 degrees to avoid inducing a deficit in a phrenic nerve (col. 17:25-30; col. 2:22) of the subject.

5. The apparatus according to claim 1, comprising detection functionality (imaging disclosed in col. 3:53-57, col. 16:30-33, col. 16:53-56, and col. 34:51), adapted to determine tissue of the subject that is not to be targeted by the ablating energy (visualization / imaging certainly does this), wherein the ultrasound array is adapted to (control system 334; col. 34:45-57) configure the ablating energy responsive to the determination of the tissue that is not to be targeted.

6. The apparatus according to claim 5, wherein the ultrasound array is adapted to (control system 334, col. 34:45-57) set the range of azimuths responsive to the determination of the tissue that is not to be targeted.

7. The apparatus according to claim 5, wherein the detection functionality

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comprises an ultrasound transducer ("ultrasound probes" is synonymous to ultrasound transducer – see col. 16:54).

8. The apparatus according to claim 5, wherein the detection functionality comprises at least a portion of the ultrasound array ("ultrasound probes" is synonymous to ultrasound array – see col. 16:54).

9. The apparatus according to claim 5, wherein the detection functionality comprises imaging functionality (imaging disclosed in col. 3:53-57, col. 16:30-33, col. 16:53-56, and col. 34:51).

Sliwa discloses more than one transducer. See col. 7:15-17, *inter alia*.

Sliwa is silent regarding azimuths. However, Sliwa discusses feedback control of the transducer-to-tissue angle (fig. 67, col. 30:55-65), making obvious to one of ordinary skill in the art claims 13-15 and 17 all claiming different ranges of azimuths. (The office contends that through routine experimentation one of ordinary skill in that art would determine the claimed ranges of azimuths as well as number of ultrasound transducers. The motivation to do so is the inherent desire to optimize the device.)

**Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sliwa in view of Crowley et al. (6,004,269).**

*Sliwa is silent regarding imaging transducers being adjacent to ablation transducers (making the image transducer part of the array) at the distal portion of the catheter and an external imaging transducer/detection functionality.*

Crowley discloses an analogous ultrasound catheter in which imaging transducers (416) are adjacent to ablation transducers (414) at the distal portion of the catheter. See figure 32a. Crowley also discloses an external visualizing ultrasound device in col. 29:35-37. The motivation to combine the patents is to better define what is suggested in Sliwa (the suggestion of ultrasound imaging) as well as to provide a specific means to visualize the targeted and non-targeted tissue.

Therefore, at the time of the invention it would have been obvious to one of ordinary skill in the art to modify Sliwa in view of Crowley by using an external visualizing ultrasound device or an internal ultrasound transducer for visualizing at the distal tip of the catheter. Again, the motivation to combine the patents is to better define what is suggested in Sliwa as well as to provide a specific means to visualize the targeted and non-targeted tissue. Sliwa suggests imaging as well as using transducers for purposes other than ablation in col. 3:53-57, col. 16:30-33, col. 16:53-56, col. 34:51, and col. 7:25-27.

### ***Response to Arguments***

Applicant's arguments filed 6-15-06 have been fully considered but they are not persuasive.

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Terminal disclaimer (10/304,500) approved 6-26-06.

Sliwa discloses flexibility in the number of transducers in col. 7:15-20 and flexibility in the range of azimuths (note transducer/tissue angle flexibility depicted in figure 67 and disclosed in col. 30:55-65). The Office contends that through routine experimentation one <sup>of</sup> ordinary skill would have determined the values currently claimed. Furthermore, the Applicant has not furnished sufficient criticality or unexpected results as to the choice of the claimed number of transducers and azimuths. R 04

Also, MPEP § 2144.04 IV B and VI B address obviousness with regards to duplication of parts and changing the shape of parts. Both sections elaborate as to why the Applicant's claims are not patentably distinct from Sliwa. For example,

*"In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) (Claims at issue were directed to a water-tight masonry structure wherein a water seal of flexible material fills the joints which form between adjacent pours of concrete. The claimed water seal has a "web" which lies \*\* in the joint, and a plurality of "ribs" \*\* >projecting outwardly from each side of the web into one of the adjacent concrete slabs. <The prior art disclosed a flexible water stop for preventing passage of water between masses of concrete in the shape of a plus sign (+). Although the reference did not disclose a plurality of ribs, the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.)"*

In other words, Sliwa does not need to expressly disclose "between 32 and 64 ultrasound transducers" to make obvious the Applicant's claims. To this end, all claims remain rejected as made obvious by Sliwa and Crowley.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Vrettakos whose telephone number is 571-272-4775. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C. Dvorak can be reached on 571-272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

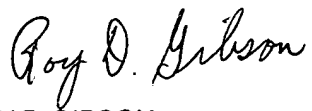


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Pete Vrettakos  
August 30, 2006



  
ROY D. GIBSON  
PRIMARY EXAMINER